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| **Lesson:** Benefits and Risks of GMO | **Grade:** 6th – 2 periods |
| **Learning Objective: What are the goals (outcomes, expectations) of this lesson?**  Students will research and debate the benefits and risks of genetically modified food. | **Skill(s): What should they be able to do as a result of this knowledge or understanding?**  Analyzing Informational Text  Developing conclusion using text based evidences |
| **Essential Questions:**   1. How does consuming GMO crops affect the world? 2. How does growing GMO crops affect the world? | **Common Core Standards** **[CCSS.ELA-LITERACY.RI.6.7](http://www.corestandards.org/ELA-Literacy/RI/6/7/)** Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.  **[CCSS.ELA-LITERACY.RI.6.8](http://www.corestandards.org/ELA-Literacy/RI/6/8/)** Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not  **Danielson 3b** |
| **Instructional Activity, Assessment, Evaluation** | |
| **Procedure**   1. The lesson will begin by what is GMO and whether they’ve eaten a genetically modified food. 2. Students will then proceed onto watching the video – *What is a Genetically Modified Food?* 3. Tell students that genetically modified crop seeds have only been available since the mid-1990s. To make such seeds, companies manipulate the gene sequence in a plant’s DNA so that it has special traits, such as the ability to tolerate a specific weed killer while the plants around it die.    * **Independent Activity:** Students willread the article *The truth about Genetically Modified Food*. While reading students will underline or highlight facts they will use in their debate. 4. **Pair Activity:** Each pair will be given a laptop and have 15 minutes to research and record information to defend their claim. A debate rubric will be given to each pair and students will receive a class participation grade based on the rubric. Students will be grading each other on how well they work together and perform the debate. 5. **Group Activity**: When both pairs are ready they will debate against each other the risks and benefits of GMO. *I will be facilitating the classroom and flowing from table to table every 7 minutes.*   At the end of the debate each pair will complete the debate rubric for their opponents.   1. Conclude the activity by having students individually review the list of benefits and controversies of genetically modified food and explain the three most important factors related to their use. | *Point out that while food labels don’t currently identify ingredients that have been genetically modified, some conclusions can be drawn about possible consumption of them by looking at the market penetration of food from genetically modified seeds.*  <https://www.scientificamerican.com/video/what-is-a-genetically-modified-food2013-07-24/>  *Point out that most processed foods contain corn and/or soy ingredients, so if students have eaten any processed foods that day, chances are high that they’ve eaten foods that contain genetically modified ingredients.*  Companies can then patent these genetically modified seeds, which gives them the legal right to control the use of any seed that contains their patented gene sequence. This situation has changed agricultural practices and spurred controversy.  Before reading the article students will start a count off. Students with even numbers at their table will be pro GMO and students with odd numbers will be con GMO.   * + Debate: The potential risks and benefits of genetically modified foods.   Students will need to use four pieces of evidences from the article and 4 pieces of research information such as statistics or information from reliable resources. |
| **Resources Needed**  <https://www.scientificamerican.com/article/the-truth-about-genetically-modified-food/> |  |

**GMO Debate Rubric**

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|  | **4** | **3** | **2** | **1** |
| **Understanding of Topic** | The team clearly understood the topic in-depth and presented their information forcefully and convincingly. | The team clearly understood the topic in-depth and presented their information with ease. | The team seemed to understand the main points of the topic and presented those with ease. | The team did not show an adequate understanding of the topic. |
| **Use of Facts/Statistics** | Every major point was well supported with several relevant facts, statistics and/or examples. | Every major point was adequately supported with relevant facts, statistics and/or examples. | Every major point was supported with facts, statistics and/or examples, but the relevance of some was questionable. | Every point was not supported. |
| **Respect for Other Team** | All statements, body language, and responses were respectful and were in appropriate language. | Statements and responses were respectful and used appropriate language, but once or twice body language was not. | Most statements and responses were respectful and in appropriate language, but there was one sarcastic remark. | Statements, responses and/or body language were consistently not respectful. |